

ISSN 2096-3246
CN 51-1773/TB
CODEN GKJAD

Advanced Engineering Sciences

工程科学与技术

· 川藏铁路工程与环境 特约稿 ·

谢和平 川藏铁路深埋隧道围岩灾变分析与思考

2022 2 第54卷 第2期
Vol.54 No.2

主办单位：四川大学

· 川藏铁路工程与环境 ·

本期栏目主编 张茹, 徐正宣

特约稿

川藏铁路深埋隧道围岩灾变分析与思考

谢和平, 张茹, 任利, 张安林, 张志龙, 邓建辉, 徐正宣, 张广泽, 冯涛,
王栋, 王哲威, 伊小娟, 林之恒, 李嘉雨, 张泽天, 袁东, 贾哲强 1

研究论文

超深定向钻探技术在川藏铁路隧道勘察中的应用

徐正宣, 刘建国, 吴金生, 冯涛, 陈明浩, 王彦东, 袁东 21

川藏铁路雅安至昌都段高陡危岩发育特征与快速评价

张广泽, 陈国庆, 王哲威, 王栋, 裴本灿 30

滑坡涌浪诱发冰湖溃决灾害链过程分析与模拟

刘威, 杨宗信, 游勇, 黄栋, 聂勇, 张广泽, 徐正宣, 王栋 41

· 人工智能安全 ·

专栏主编 陈兴蜀

基于语义感知图神经网络的智能合约字节码漏洞检测方法

赵波, 上官晨晗, 彭小燕, 安扬, 童俊成, 袁安琪 49

基于生成对抗网络的对抗样本集成防御

曹天杰, 余志坤, 郑韵妍, 杨睿, 张凤荣, 陈秀清 56

基于图神经网络的P2P僵尸网络检测方法

林宏刚, 张运理, 郭楠馨, 陈麟 65

· 水利与土木工程 ·

废玻璃混凝土最优化掺方式及耐高温性能研究

李碧雄, 张治博, 朱亚阁, 刘星 73

斜向肋格水泥聚苯模壳格构式混凝土墙体抗震性能试验

李小军, 曹鑫雨, 唐柏贊, 邓小芳 81

三轴循环加卸载下砂岩声发射分形特征试验

王伟, 汪涛, 熊德发, 陈亮, 张海洋, 朱其志 90

砂土中浅埋圆或螺旋形锚板上拔承载机理数值分析

郝冬雪, 袁驰, 陈榕, 张新, 史旦达, 孔纲强 101

基于信息熵理论的黄土高原小流域雨量站网优化

丁文峰, 韩昊宇, 王协康, 郭宜薇, 王一然 113

明渠瞬时床面切应力粒子图像测量技术

陈启刚, 王忠祥, 段炎冲, 钟强, 黄磊, 李丹勋 122

组合桥面板-波形腹板钢箱简支组合梁温度效应

王力, 刘世忠, 李子奇, 黄佼佼, 丁万鹏 133

单排水孔轴对称填充流场解析解

张帅, 叶飞, 胡超, 郑双, 符文熹 141

冻融循环作用下危岩体稳定性劣化机制及敏感参数分析

邓正定, 詹兴欣, 舒佳军, 杨石扣, 曹茂森 150

CFRP约束钢管高强混凝土轴压短柱承载力的极限分析

李松, 焦楚杰, 何松松, 梁健, 李宏宇 162

堆载-电渗联合作用下双层地基1维固结解析解

宗梦繁, 李传勋, 吴文兵, 田乙, 梁荣柱, 梅国雄 170

· 信息工程 ·

加性频域分解的生成对抗网络语音去混响

全海燕, 王涛, 郑志清 180

基于多视图并行的可配置卷积神经网络加速器设计

应三丛, 彭铃 188

· 机械工程 ·

焊接机器人焊缝跟踪方法及路径规划研究

曹学鹏, 脱帅华, 张弓, 吴月玉, 张雨航, 樊豪, 赵睿英, 冯艳丽 196

一种双稳态减速带振动俘能装置发电性能研究

吴子英, 严涵, 李永越, 赵伟 205

征稿简则

封三

· SICHUAN—TIBET RAILWAY ENGINEERING AND ENVIRONMENT ·

Column Editor ZHANG Ru, XU Zhengxuan

Invited Contribution

Analysis and Thoughts on Surrounding Rock Mass Catastrophe of Deep-buried Tunnels Along Sichuan—Tibet Railway

XIE Heping, ZHANG Ru, REN Li, ZHANG Anlin, ZHANG Zhilong, DENG Jianhui, XU Zhengxuan, ZHANG Guangze, FENG Tao, WANG Dong, WANG Zhewei, YI Xiaojuan, LIN Zhiheng, LI Jiayu, ZHANG Zetian, YUAN Dong, JIA Zheqiang 1

Research Paper

Application of Ultra-deep Directional Drilling Technology in the Investigation of Sichuan—Tibet Railway Tunnel

XU Zhengxuan, LIU Jianguo, WU Jinsheng, FENG Tao, CHEN Minghao, WANG Yandong, YUAN Dong 21

Development Characteristics and Rapid Evaluation of High-steep Unstable Rock in Ya'an—Changdu Section of Sichuan—Tibet Railway

ZHANG Guangze, CHEN Guoqing, WANG Zhewei, WANG Dong, PEI Bencan 30

Dynamic Analysis and Numerical Simulation of Disaster Chain from Landslide, Surge Wave to Glacier Lake Outburst

LIU Wei, YANG Zongji, YOU Yong, HUANG Dong, NIE Yong, ZHANG Guangze, XU Zhengxuan, WANG Dong 41

· ARTIFICIAL INTELLIGENCE SECURITY ·

Column Editor CHEN Xingshu

Semantic-aware Graph Neural Network for Smart Contract Bytecode Vulnerability Detection

ZHAO Bo, SHANGGUAN Chenhan, PENG Xiaoyan, AN Yang, TONG Juncheng, YUAN Anqi 49

Ensemble Adversarial Example Defense Based on Generative Adversarial Network

CAO Tianjie, YU Zhikun, QI Yunyan, YANG Rui, ZHANG Fengrong, CHEN Xiuqing 56

P2P Botnet Detection Method Based on Graph Neural Network

LIN Honggang, ZHANG Yunli, GUO Nanxin, CHEN Lin 65

· HYDRAULIC & CIVIL ENGINEERING ·

Optimal Compounding Method and High Temperature Resistance of Waste Glass Concrete

LI Bixiong, ZHANG Zhibo, ZHU Yage, LIU Xing 73

Seismic Performance Test of Expansive Polystyrene Granule Cement Latticed Concrete Wall with Diagonal Bracing

LI Xiaojun, CAO Xinyu, TANG Baizan, DENG Xiaofang 81

Experiment of Fractal Characteristics of Acoustic Emission of Sandstone Under Triaxial Cyclic Loading and Unloading

WANG Wei, WANG Tao, XIONG Defa, CHEN Liang, ZHANG Haiyang, ZHU Qizhi 90

Numerical Analysis of Uplift Bearing Mechanism for Shallow Circular or Helical Anchor Plate in Sand

HAO Dongxue, YUAN Chi, CHEN Rong, ZHANG Xin, SHI Danda, KONG Gangqiang 101

Rainfall Networks Optimization in Small Catchment of Loess Plateau Based on Information Entropy

DING Wenfeng, HAN Haoyu, WANG Xiekang, GUO Yiwei, WANG Yiran 113

Particle Image Techniques for Measuring Instantaneous Bed Shear Stress in Open Channel Flows

CHEN Qigang, WANG Zhongxiang, DUAN Yanchong, ZHONG Qiang, HUANG Lei, LI Danxun 122

Temperature Effect of Simply Supported Composite Box Girder with Corrugated Steel Webs and Composite Deck

WANG Li, LIU Shizhong, LI Ziqi, HUANG Jiaojiao, DING Wanpeng 133

Analytical Solution to Flow Field Around an Axisymmetric Filled Drainage Hole

ZHANG Shuai, YE Fei, HU Chao, ZHENG Shuang, FU Wenxi 141

Stability Deterioration Mechanism and Sensitive Parameter Analysis of Dangerous Rock Mass Under Freeze-thaw Cycles

DENG Zhengding, ZHAN Xingxin, SHU Jiajun, YANG Shikou, CAO Maosen 150

Limit Analysis of Bearing Capacity of CFRP Confined High Strength Concrete Filled Steel Tube Stub Columns Under Axial Compression

LI Song, JIAO Chujie, HE Songsong, LIANG Jian, LI Hongyu 162

Analytical Solution for One-dimensional Consolidation of Double-layered Soil Under Combined Action of Load and Electro-osmosis

ZONG Mengfan, LI Chuanxun, WU Wenbing, TIAN Yi, LIANG Rongzhu, MEI Guoxiong 170

· INFORMATION ENGINEERING ·

Speech Dereverberation Based on Generative Adversarial Network with Additive Frequency Domain Decomposition

QUAN Haiyan, WANG Tao, ZHENG Zhiqiang 180

Configurable Convolutional Neural Network Accelerator Based on Multi-view Parallelism

YING Sancong, PENG Ling 188

· MECHANICAL ENGINEERING ·

Research on Welding Seam Tracking Method and Path Planning of Welding Robot

CAO Xuepeng, TUO Shuaihua, ZHANG Gong, WU Yueyu, ZHANG Yuhang, FAN Hao, ZHAO Ruiying, FENG Yanli 196

Study on Generation Performance of a Bistable Speed Bump Vibration Energy Harvester

WU Ziyi, YAN Han, LI Yongyue, ZHAO Wei 205